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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,316	09/02/2003	Hideki Suzuki	Q77258	5794
23373	7590	10/04/2005	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			GAGLIARDI, ALBERT J	
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EK

Office Action Summary	Application No. 10/652,316	Applicant(s) SUZUKI, HIDEKI	
	Examiner Albert J. Gagliardi	Art Unit 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 11-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-13 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-10, drawn to a radiation image storage panel, classified in class 250, subclass 484.4.
 - II. Claims 11-13, drawn to a method of reading a radiation image storage panel, classified in class 250, subclass 585.
2. The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used to practice another and materially different process such as a process wherein the stimulation light is not applied in a manner as to prevent stimulated emissions from reaching a saturation level.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During telephone conversations with Mark Boland on 24 and 28 September a provisional election was made with traverse to prosecute the invention of Group I, claims 1-10. Affirmation of this election must be made by applicant in replying to this Office action. Claims 11-13 are

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withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Note: Since the product is not considered allowable, as noted below, restriction is proper between apparatus and the method of using and rejoinder of the method claim would not be appropriate at this time.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the claim includes functional limitations of a phosphor layer having a scattering length of 5 μm to 20 μm for stimulating and stimulated light and a reflecting layer having a scattering length of 5 μm or less for stimulating light. These limitations are unclear. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. See MPEP 2114.

In this case, the limitations are rejected as indefinite because it is unclear what, if any structural properties of the phosphor and the reflecting layers are responsible for the recited function.

Further regarding claim 1, it has been held that a claim may be rendered indefinite by reference to an object that is variable. See MPEP 2173.05(b).

In this case, it is understood that the scattering length for light of the stimulating and stimulated light is at least partially dependent on the actual wavelength of the light, which is not particularly recited in the claim. As such, it is considered that even if the properties responsible for the given function were clear, the claims would also be indefinite because, presumably, the properties would be dependent on the wavelength of the stimulating and stimulated light, which is also variable.

Regarding claim 2, the claim recites a phosphor particle to binder ratio of 1:10 to 1:50 but the specification seems to indicate the claimed ratio should be a binder to phosphor particle ratio (see page 23, line 34 of the disclosure).

The remaining claims are rejected on the basis of their dependency.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-5 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagita *et al.* (US 5,877,504) in view of Van den Berg *et al.* (US 6,815,092 B2).

Regarding claim 1, Yanagita discloses a radiation image storage panel having a stimuable phosphor layer and a light-reflecting layer provided thereon (col. 11, line 66 to col. 12, line 3), wherein the stimuable phosphor layer scatters both of a stimulating light and a stimulated emission emitted by the phosphor layer with a scattering length (inherent, see also col. 4, lines 34-38), and the light-reflecting layer scatters a stimulating light with a scattering length

(inherent). Although *Yanagita* does not specifically disclose the individual scattering lengths of the stimulated and stimulating light in either the phosphor layer or the reflecting layer, such lengths are considered as inherent aspects of the device since the structure is the same. In addition, it is well known that the sensitivity and quality of a radiation image panel is determined by a variety of well-known result effective variables including chemical composition, phosphor particle size, density, and distribution, and optical scattering (see for example *Van den Bergh* at col. 2, lines 48-67) and that, absent some degree of criticality, it would have been an obvious design choice to manipulate the variables such as optical scattering length in order to achieve a radiation detecting panel with desired balance between image sharpness and speed/sensitivity of the panel.

Regarding claim 2, as best understood, *Yanagita* discloses that typical weight ratio of binder to phosphor particles may be in the range of 1:33 to 1:1000 (col. 4, lines 18-24) while *Van den Bergh* further discloses a ratio of 1:4 to 1:99 (col. 7, lines 37-40), both of which significantly overlaps the recited range of 1:10 to 1:50 and would have been a matter of routine design choice depending on the needs of the application.

Regarding claim 3, *Van den Bergh* further discloses that optimum mean particle size for a given application is a compromise between imaging speed and image sharpness desired wherein the mean phosphor particle size is in the range of 2 μm to 20 μm (col. 13, lines 26-35), which significantly overlaps the recited range of 2 μm to 10 μm , and would have been a matter of routine design choice depending on the needs of the application.

Regarding claim 4, *Yanagita* discloses that the phosphor layer may have a packing density in excess of 65% (col. 4, lines 23-24).

Regarding claim 5, *Yanagita* discloses that the panel further includes a protective layer (col. 12, lines 20-25). Although *Yanagita* does not disclose a specific degree of haze, *Van den Bergh* further discloses that the degree of haze of the protective film is a well-known result effective variable utilized in order to improve image quality (col. 2, lines 4-8). Therefore, absent some degree of criticality, the recitation of a particular degree of haze, such as from 5 to 80%, would have been an obvious design choice in order to achieve a radiation detecting panel with improved image quality.

Regarding claim 7-10, *Yanagita* discloses that the panel may include a support sheet attached to a light-reflecting layer via an adhesive (col. 11, line 66 to col. 12, line 6). Curing an adhesive is well known and considered an obvious design choice. Absent some degree of criticality, the particular curing agent and thickness of the adhesive layer is considered a matter of routine design choice within the skill of a person of ordinary skill in the art depending on the needs of the application.

9. Claims 6 is are rejected under 35 U.S.C. 103(a) as being unpatentable over *Yanagita* and *Van den Bergh* as applied above, and further in view of Fukui (US 6,246,063 B1).

Regarding claim 6, although *Yanagita* does not disclose the particulars of the protective layer, *Fukui* discloses an optimal protective layer for a radiation image panel wherein the protective layer comprises a polymer and a filler wherein the filler has a mean particle size of 0.1 μm to 1.0 μm in an amount of 0.5 to 10 wt. % which significantly overlaps the recited ranges and would have been a matter of routine design choice depending on the needs of the application.

Conclusion

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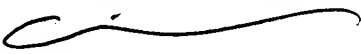
10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert J. Gagliardi whose telephone number is (571) 272-2436.

The examiner can normally be reached on Monday thru Friday from 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Albert J. Gagliardi
Primary Examiner
Art Unit 2878

AJG